

In the Claims

Please amend Claim 1 as follows:

1. A system for condition assessment of a piece of equipment comprising:
  - a virtual condition assessment instrument for measuring a condition of the piece of equipment, comprising:
    - a data capture subsystem for sampling a set of analog signals and converting the set of analog signals to at least one digital signal;
    - a model component, comprising:
      - a filter to estimate disturbances; and
      - a predictor for predicting an expected response;
    - a signal-based component for processing output from said model component;
    - a classification component for processing output from said signal-based component;
    - a fuzzy logic expert component for combining information from said classification component and said model component to assess the condition of the piece of equipment; and
  - a virtual end-of-life prediction instrument for measuring an end of life of the piece of equipment, comprising:
    - a condition prediction end-of-life prediction component for analyzing information from said virtual condition assessment instrument to predict condition and end-of-life of the piece of equipment;

a prediction condition and end-of-life uncertainty estimation component for processing information received from said condition prediction end-of-life prediction component to obtain an estimate of the uncertainty of the condition and end-of-life prediction; and  
an end-of-life panel for displaying the condition and end-of-life prediction and uncertainty.